TG 197

Guide for Developing Integrated Solid Waste Management Plans at Army Installations

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PREFACE

Regulatory directions and public opinion are placing increased emphasis on solid waste management and recycling issues. Industry, consumers, and government entities are being forced to evaluate their solid waste management practices and increase the extent of their source reduction, recycling/resource recovery programs, and procurement of products with recovered materials. In most states, the counties are required to develop integrated solid waste management plans (ISWMPs). County plans sometimes include data for Army installations, but do not provide a detailed assessment of solid waste management on the installations. Army regulations require each installation to develop an ISWMP. The process of developing the ISWMP requires thorough evaluation of all aspects of solid waste management, resulting in meaningful planning and goal setting.

"Integrated" solid waste management reflects the U.S. Environmental Protection Agency's pollution prevention hierarchy, which includes (in preferential order) source reduction, recycling, treatment, and disposal. To fully integrate the waste management system, purchasing of recycled content products, or Affirmative Procurement, is needed to stimulate markets for recycled goods. Therefore, the ISWMP addresses each of these components. It identifies source reduction measures that may be used to reduce the waste stream. It defines the various elements of the waste stream and identifies the avenues of reuse, recycling or disposal for each. It closes the circle on recycling by incorporating Affirmative Procurement into contracting and purchasing. It documents correct procedures for all aspects of solid waste management including storage, collection, segregation, transportation, treatment, recycling, and disposal. It presents factors potentially affecting solid waste management, and lists alternatives and contingency plans for future consideration. It assigns responsibilities and tasks to installation personnel for the effective execution of the solid waste programs.

The decisions involved in solid waste management today are diverse and far-reaching. Should we contract disposal or operate an onsite landfill? Will recycling pay or cost us? Which recyclables should be included in the recycling program? Should we build an incinerator or utilize regional disposal facilities? How can we motivate personnel to implement source reduction practices? What systemic changes must be made to follow Affirmative Procurement guidelines?

Although many installations are faced with such questions, it is beyond the scope of this guide to provide the necessary analysis and decision-making tools. Factors affecting solid waste decisions will vary with location, state legislation, recyclable markets, type of facility, population, and mission, to name a few. This technical guide is meant to provide Army installations with a generic framework for developing a complete and effective ISWMP. Decision-making, policy, and planning factors are provided for consideration where applicable.

Finally, the following objectives should be kept in mind when preparing the ISWMP:

- Complying with applicable Federal, state, local, and Army regulations regarding solid waste management and recycling.

- Achieving waste reduction goals set by the Army, the Department of Defense, and the state and Federal governments.

- Characterizing the types and amounts of solid waste (including non-regulated or special wastes, potential recyclables, and construction debris) generated through standardized data collection procedures.

- Describing the storage, collection, transportation, and disposal for each category of solid waste identified.

- Demonstrating that alternate disposal mechanisms have been identified and evaluated prior to the selection of the preferred disposal method.

- Evaluating future disposal options based on changes in waste generation, governing regulations, and/or the availability of regional disposal facilities.

- Assessing recycling and composting programs and identifying ways to improve the programs.

- Determining the status of the Affirmative Procurement program and developing strategies aimed at full compliance with procurement guidelines.

- Maximizing purchases of environmentally preferable products.

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GUIDE FOR DEVELOPING INTEGRATED SOLID WASTE MANAGEMENT PLANS AT ARMY INSTALLATIONS

1. GENERAL.

a. Basis for Guide. This technical guide was developed to assist Army installations in meeting the requirements for developing a written Integrated Solid Waste Management Plan (ISWMP). The guide reflects current U.S. Environmental Protection Agency (USEPA) and Army regulations, guidelines, and philosophies. This guide covers the relevant issues pertaining to solid waste management and has the flexibility to be tailored to specific installation needs.

b. Guide Format. This guide is structured to mirror the organization of an ISWMP, beginning with the following section, APPLICABLE REGULATIONS AND REFERENCES. An outline format is presented to facilitate conversion to an actual plan. Each section provides suggested information that the writer should include. Also included are text boxes containing additional useful information. It may be appropriate to include similar explanatory text in the ISWMP to strengthen the plan as an educational and promotional tool.

2. APPLICABLE REGULATIONS AND REFERENCES. Applicable laws, regulations, and published guidance should be used in the development of the ISWMP and referenced within the document. A comprehensive list of state, Federal, and Army references on the subjects of solid waste management, recycling, and Affirmative Procurement is provided below. The list is not exhaustive, so it may be appropriate to include other references. Also, be sure to include new regulations or guidance documents that have been published since the publication of this guide. Though Federal legislation has established national solid waste policy, states have the lead for policy implementation, the right to issue more restrictive regulations, and the power of enforcement. State and local requirements are often the most stringent and dominating factors driving an installation's solid waste management program. The generic state regulations are therefore prioritized below, and local rules should be added when applicable.

a. State Solid Waste Management Act. (Title, Chapter, date of enactment, summary of requirements.)

b. State Solid Waste Management Regulations. (Governing Agency, regulation title, latest date of amendment, summary of requirements.)

c. Resource Conservation and Recovery Act (RCRA), Public Law 94-580, 21 October 1976. This law established standards and guidelines for the management of hazardous and nonhazardous solid wastes. The act introduced and encouraged the practices of waste minimization through source reduction, Affirmative Procurement (use of recovered materials), recycling, and conversion of waste to energy. The RCRA Section 6002 specifically requires the

Federal government to promote standards and practices for the procurement of recycled and recovered materials. The act was codified in Title 40, Code of Federal Regulations (CFR) Parts 240-272. Pertinent sections are listed below:

(1) Part 240: Guidelines for the Thermal Processing of Solid Wastes - contains guidance for the operation of solid waste incinerators and thermal processing units.

(2) Part 241: Guidelines for the Land Disposal of Solid Wastes - contains guidance applicable to solid waste land disposal facilities.

(3) Part 243: Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste - establishes requirements and recommended practices for the storage, collection and management of solid waste, and for the operation of vehicles used in the collection, transport, and handling of waste.

(4) Part 246: Source Separation for Materials Recovery Guidelines - contains recycling requirements for the recovery of paper, corrugated containers, and other consumer goods.

(5) Part 247: Guidelines for Procurement of Products that Contain Recycled Material - contains guidance regarding "buy recycled" practices that will stimulate the recovered materials market.

(6) Part 257: Criteria for Classification of Solid Waste Disposal Facilities and Practices - contains guidance for determining whether disposal facilities meet minimum standards to protect human health and the environment.

(7) Part 258: Criteria for Municipal Solid Waste Landfills - establishes criteria and requirements for operating a municipal solid waste landfill, and includes location restrictions, operating criteria, design criteria, ground-water and explosive gases monitoring, and closure and post-closure requirements.

(8) Part 261: Identification and Listing of Hazardous Waste - contains the RCRA definition of a solid waste and lists the criteria for characterization as a hazardous waste.

d. Pollution Prevention Act of 1990, Public Law 101-508, 5 November 1990. The Pollution Prevention Act established a national policy to prevent or reduce waste generation through source reduction, reuse, recycling, and treatment. It introduced the pollution prevention hierarchy of waste management options that is the cornerstone of integrated solid waste management.

e. Federal Facilities Compliance Act, 6 October 1992. This Act required Federal facilities to comply with substantive and procedural requirements of Federal, state, and local solid and hazardous waste regulations. It waived the immunity previously held by Federal facilities.

f. Federal Property and Administrative Services Act of 1949, (Public Law 152). This Act regulates the distribution of proceeds from the sale of recyclable materials on Federal facilities.

g. 10 U.S. Code 2577, "Disposal of Recyclable Materials." This regulation contains requirements for the distribution of proceeds generated from installation recycling programs.

h. Military Construction Codification Act of 1982 (Public Law 97-214). This Act was the basis for the regulation 10 U.S. Code 2577, and contains a provision allowing net proceeds generated from the sale of Qualifying Recycling Program (QRP) recyclables to be used by installations for certain purposes.

i. Executive Orders (EOs).

(1) EO 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition, 14 September 1998. This order requires Federal agencies to incorporate waste prevention and recycling into daily operations and to increase the use of recovered materials by environmentally preferable purchasing and by following published Affirmative Procurement guidelines.

(2) EO 12856, Federal Compliance With Right-To-Know Laws and Pollution Prevention Requirements, 3 August 1993. This order mandates Federal facility compliance with the Pollution Prevention Act.

(3) EO 12780, Federal Agency Recycling and Council on Federal Recycling and Procurement Policy, October 1991. This order encouraged Federal agencies to exercise waste reduction, recycling, and Affirmative Procurement.

j. Affirmative Procurement Notices and Guidelines.

(1) Federal Register Volume 60, Number 21386, "Recovered Materials Advisory Notice" (RMAN) and "Comprehensive Guideline for the Procurement of Products Containing Recovered Materials," (CPG) 1 May 1995. The CPG identifies 19 items (in addition to the original five designated items) that should contain recycled material and recommends recycled content percentages for each item. The RMAN provides guidance on purchasing the designated products.

(2) Federal Register Volume 62, Number 219, "Recovered Materials Advisory Notice II" and "Comprehensive Guideline for the Procurement of Products Containing Recovered Materials," 13 November 1997. The CPG identified 12 more items (in addition to the 24 previously designated items) that should contain recycled material and recommended recycled content percentages for each item. The RMAN II provides guidance on purchasing the newly designated products.

(3) Federal Register Volume 63, Number 165, "Recovered Materials Advisory Notice III" and "Comprehensive Guideline for the Procurement of Products Containing Recovered Materials; Proposed Rule," 26 August 1998. The CPG proposes the addition of 19 additional items and the RMAN III provides purchasing guidance.

k. Army Regulations and Policies.

(1) AR 420-49, Utility Services, 28 April 1997. This regulation calls for the implementation of integrated solid waste management, development of the ISWMP, source reduction to reduce the waste stream, and implementation of a QRP.

(2) AR 200-1, Environmental Protection and Enhancement, 21 February 1997. This AR establishes Army policies, procedures, and responsibilities for environmental program areas. It requires installations to develop ISWMP's, establishes solid waste measures of merit (now superseded by Army policy), and authorizes direct sales of recyclables.

(3) Assistant Chief of Staff for Installation Management (DAIM-FDF-E) Memorandum, 22 Jun 98, subject: Fielding of Solid Waste Annual Report (SWAR) Software.

(4) Assistant Chief of Staff for Installation Management (DAIM-FD) Memorandum, 11 Jan 99, subject: Implementation of Solid Waste Annual Report (SWAR) - Update.

(5) Assistant Chief of Staff for Installation Management (DAIM-FDF-E) Memorandum, undated (draft), subject: Interim Policy for Management of Construction and Demolition Waste.

l. Department of Defense (DOD) Requirements.

(1) DOD Instruction (DODI) 4715.4, Pollution Prevention, 18 June 1996. This DODI establishes a requirement for installation QRPs, calls for Affirmative Procurement, and authorizes direct sales of recyclables.

(2) Memorandum, Office of the Under Secretary of Defense, 13 May 1998, subject: New DOD Pollution Prevention Measure of Merit. DOD issued this policy that sets forth a new MoM as follows: *"By the end of FY 2005, ensure the diversion rate for non-hazardous solid*

waste is greater than 40% , while ensuring integrated non-hazardous solid waste management programs provide an economic benefit when compared with disposal using landfilling and incineration alone."

(3) Memorandum, Office of the Under Secretary of Defense, 15 May 1998, subject: Recycling of Firing-Range Scrap Consisting of Expended Brass and Mixed Metals Gleaned from Firing-Range Clearance Through Qualified Recycling Programs. This defines policy for ammunition, explosives, and dangerous articles (AEDA) collected from firing ranges when installations directly sell the metals. Metals must be certified safe before being processed by QRPs, and QRP personnel must be trained to recognize and segregate AEDA.

m. Additional Sources of Information.

(1) Decision-Maker's Guide to Solid Waste Management, Second Edition, EPA 530-R-95-023, August 1995.

(2) Characterization of Municipal Solid Waste in the United States: 1997 Update, EPA 530-R-98-007, May 1998.

(3) Measuring Recycling - A Guide for State and Local Governments, EPA 530-R-97-011, September 1997.

(4) The Consumer's Handbook for Reducing Solid Waste, EPA 530-K-96-003, September 1996.

(5) Installation Recycling Guide, U.S. Army Engineering and Housing Support Center, TN 420-47-02, 1 September 1991.

(6) Analysis of U.S. Army Solid Waste Management Policy, Army Environmental Policy Institute, July 1992.

(7) Integrated Solid Waste Management, U.S. Army Engineering and Housing Support Center, PWB 420-47-03, 3 May 1993.

n. Supply Catalogues.

(1) Supply Catalogue, U.S. General Services Administration, Federal Supply Service, Spring 1997.

(2) Environmental Products Guide, U.S. General Services Administration, Federal Supply Service, Spring 1998.

(3) Environmental Products, Defense Logistics Agency (DLA), December 1996.

o. Web Sites.

(1) U.S. EPA Office of Solid Waste – provides guidance and information on a variety of solid waste topics. <http://www.epa.gov/osw/>

(2) U.S. EPA Environmentally Preferable Purchasing – the Office of Pollution Prevention and Toxics guidance on green purchasing. <http://www.epa.gov/opptintr/epp/>

(3) U.S. EPA Comprehensive Procurement Guidelines - contains CPGs and RMANs as well as product information and supplier lists. <http://www.epa.gov/epaoswer/non-hw/procure/index.htm>

(4) U.S. EPA publications list for landfills – assortment of EPA documents on the subject of municipal solid waste landfills. <http://www.epa.gov/epaoswer/non-hw/muncpl/landfill.htm>

(5) Enviroene - part of the U.S. EPA's web site, it provides a single repository for pollution prevention, compliance assurance, and enforcement information and data bases. The search engine searches multiple web sites, both inside and outside the EPA. <http://es.epa.gov/>

(6) Defense Environmental Network Information Exchange – the DOD's comprehensive environmental network provides access to legislative, compliance, restoration, cleanup, and DOD guidance and information. <http://www.denix.osd.mil/>

(7) Office of the Federal Environmental Executive – provides direction and policies for the national challenges of source reduction and recycling. <http://www.ofee.gov/>

(8) Code of Federal Regulations – online access and search of the CFR to provide the public with enhanced access to codified regulations. <http://www.access.gpo.gov/nara/cfr/index.html>

(9) Solid Waste Association of North America – an educational association and advocacy group for solid waste professionals in the public and private sector. <http://www.swana.org/>

(10) Waste Prevention World – part of the California Integrated Waste Management Board, this focuses on source reduction. <http://www.ciwmb.ca.gov/WPW/>

(11) National Recycling Coalition – dedicated to increasing awareness of recycling and relaying the positive impact of recycling. <http://www.nrc-recycle.org/>

(12) Global Recycling Network – a business-oriented free-access site dedicated to recycling information. <http://grn.com/grn/home.htm>

3. PURPOSE. The ISWMP must have an explicit statement of purpose including at least the following elements:

a. To define and document the installation's current solid waste management program.

b. To set forth goals for improving solid waste management through the practices of source reduction and Affirmative Procurement.

c. To specify the strategies and responsibilities for achieving those goals.

d. To meet the Army requirement to develop an ISWMP.

4. PROGRAM OBJECTIVES. The plan should set forth major program objectives to include at least the following:

a. To effectively manage solid waste in a manner that protects human health and the environment.

b. To comply with applicable Federal, state, local, and Army solid waste management regulations.

c. To reduce the volume of solid waste generated to meet or surpass state, DOD, and Army waste reduction goals.

d. To reuse or recycle elements of the solid waste stream to the maximum extent possible.

e. To follow Affirmative Procurement guidelines and maximize environmentally preferable purchasing.

5. BACKGROUND INFORMATION. Provide background information about the installation to include the following.

a. Location. Identify the state, county, and municipality. Briefly discuss the solid waste management options in the region (e.g., use of landfills, incinerators, and recycling programs). More detailed information should be provided under "Planning Factors." The distances to nearby cities may be helpful in order to gauge distances to recycling centers,

vendors, or municipal disposal facilities. Descriptions of physiographic location and natural borders to the installation (rivers, mountains, etc.) may also be useful.

b. Current Land Use. Summarize the land use within the installation boundaries, such as percent housing, administration, industrial, disposal/transfer facilities, training, firing ranges/impact areas, and wetlands.

c. Mission. State the current and future mission(s) of the installation.

d. Population.

(1) Current. State the population of the military and civilian work force and number of on-post residents.

(2) 10- and 20-Year Projection. State the projected military and civilian work force, and number of residents, if available.

e. Master Plan. Report any planned major constructions, demolitions, or alterations in land use which could affect solid waste generation.

f. Planning Factors. Briefly identify the major factors affecting solid waste management planning and decision-making at the installation. These should be discussed in greater detail under Section 15, FACTORS AFFECTING SOLID WASTE MANAGEMENT DECISION-MAKING, but may be summarized here to provide an overall picture of the installation's solid waste situation and constraints. Such factors may be regulatory, economic, environmental, political, operational, or logistical. Factors to be considered may also relate to the size, mission, location, or closure/realignment status of the installation.

BACKGROUND INFORMATION
How Much Is Too Much?

The background information in the ISWMP should be installation-specific and relevant to some aspect of solid waste management. Lengthy descriptions of the installation's environmental setting are not necessary, but the ISWMP may include references to documents containing such information. Descriptions of past disposal practices or past disposal sites are not needed unless they warrant consideration in assessing current or future practices. Generally, contents should focus on current solid waste practices and programs as well as future plans. If available, a pie chart or table showing national or state waste generation rates and recycled material breakdowns would help set the stage for the installation's solid waste planning. Recommended Source: The State of Garbage in America, Annual Biocycle

6. RESPONSIBILITIES. Specify the responsibilities, both individual and organizational, for all aspects of solid waste management. The following paragraphs contain examples of roles and responsibilities in the solid waste management program. Installations must tailor these to fit their particular needs. For example, at some installations the recycling program is managed by the Director of Public Works (DPW) and at others by the Director of Community Activities (DCA). The recycling program responsibilities should reflect the actual program management structure.

QRP OR NON-QRP?

A QRP is a recycling program that accounts for and distributes recycling proceeds for environmental, safety, and morale, welfare, and recreation (MWR) programs. An installation may operate a non-QRP recycling program if the a contractor collects separated recyclables as a service to the installation. In this case, recycling proceeds are most likely not returned to the installation - unless the contract specifies otherwise. Other non-QRP recycling programs include the Defense Reutilization and Marketing Office (DRMO) recovery of scrap materials, such as furniture.

a. Installation Commander.

(1) Establish and/or maintain a functional organizational structure to plan, execute, and monitor the solid waste program.

(2) Provide command emphasis on solid waste reduction, materials reuse, recycling, Affirmative Procurement, and composting.

(3) Formally establish an installation recycling program or QRP (see text box) and designate the installation activity responsible for oversight of the program.

(4) Chair the Environmental Quality Control Committee (EQCC) or other installation forum that addresses solid waste management and recycling issues.

(5) Ensure that the proceeds from the QRP are used in accordance with Public Law 152 and DOD Instruction 7310.1.

(6) Support recycling programs by ensuring that the Affirmative Procurement requirements of Executive Order 13101 are met, and designate the installation activity responsible for oversight of the program.

b. All Directors.

(1) Advise directorate activities of state, Federal, and Army requirements for managing and reducing solid wastes, recycling, and Affirmative Procurement.

(2) Monitor directorate activities for compliance with state, Federal, and Army solid waste management requirements, and recommend changes in policies or procedures to improve program management when necessary.

(3) Support and emphasize the practices of waste reduction, Affirmative Procurement, recycling, and yard waste composting.

(4) Ensure that all required training is approved, resourced, accomplished, and documented.

(5) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

c. Director of Public Works (DPW).

(1) Ensure that solid waste storage, collection, transportation, and disposal are conducted in accordance with state, Federal, and Army regulations.

(2) Program, budget, and support the resource requirements to manage the solid waste program, to comply with Federal, state, and Army regulations, and to achieve state and DOD waste reduction goals.

(3) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

d. Director of Resource Management (DRM).

(1) Ensure that proceeds from the recycling program are used in accordance with Public Law 152 and U.S. Code 2577 and according to the Commander's direction.

(2) For QRPs, the Finance and Accounting Office will establish and maintain a clearing account for the deposits of proceeds and ensure that all collections are accumulated in that account.

e. Director of Community Activities (DCA).

(1) Actively promote the recycling program based on input from the QRP manager.

(2) Ensure that Comprehensive Procurement Guidelines are followed in applicable purchase requests and purchasing contracts. (Note that the guidelines are required only for purchases using appropriated funds. However, following the CPG supports the installation's commitment to purchasing recovered content materials.)

(3) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

f. Director of Logistics (DOL).

(1) Advise procuring activities on the availability of environmentally preferable products and Affirmative Procurement requirements.

(2) Seek ways to reuse and reduce packaging and packing materials.

(3) Actively support the environmental office in measuring progress to meet waste reduction goals and Affirmative Procurement requirements.

(4) Communicate regularly with the DRMO to maintain current information on markets for excess or unserviceable materials and recyclable materials.

(5) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

g. Director of Contracting (DOC).

(1) Ensure that construction and procurement contracts meet Federal Affirmative Procurement requirements and source reduction strategies, as follows:

(a) Require the use of environmentally preferable products where applicable, including those containing recycled content, using less energy, and/or containing less or reusable packaging.

(b) Stipulate in contracts that paper products contain 30% recycled content paper or are printed on tree-free paper, and that contractor documents be printed double-sided.

(c) Include the requirement to consider sustainable construction, including the use of biobased materials in construction contracts.

(d) For building deconstruction (demolition) contracts, ensure measures for the salvaging, reuse, and recovery of materials are incorporated. Include provisions for quantifying the materials diverted from the waste stream.

(2) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

h. Contracting Officer's Representatives (CORs).

(1) Periodically review the solid waste management contracts for overall effectiveness and monitor the performance of the contractor. Evaluate such factors as number, size, and location of pickup stations, truck routes, type of equipment, scheduling, supervision, and effective use of manpower.

(2) Coordinate with the QRP manager to develop strategies for improved recycling and, if necessary, modify contracts to implement those strategies.

(3) Include provisions for Affirmative Procurement and recycling in all contracts as appropriate. Example of types of contracts include: construction, deconstruction, janitorial, supply/procurement, engineering/design, and utilities.

(4) Periodically review recycling contracts for overall effectiveness and monitor the performance of the contractor.

i. Chief, Environmental Division (and/or Solid Waste Manager).

(1) Identify a person to be responsible for managing the solid waste program. The solid waste manager may also be designated to assume any or all of the responsibilities listed below.

(2) Periodically review and monitor compliance with all applicable state, Federal, and Army requirements for solid waste management and recycling. Ensure compliance at tenant activities and subinstallations.

(3) Determine the most cost-effective and efficient means of source reduction, recycling, and waste storage, collection, treatment, and/or disposal.

(4) Recommend changes in policies or procedures to improve program management when necessary.

(5) Advise all waste-generating activities of Federal, state, and Army requirements for managing solid wastes, including requirements for permitting, reporting, and recordkeeping.

(6) Serve as the installation point of contact for questions, complaints, or other notification regarding solid waste management and recycling.

(7) Ensure sufficient funding levels to comply with regulatory requirements and support waste reduction initiatives.

(8) Oversee all aspects of the solid waste program including Affirmative Procurement, source reduction, resource recovery, and recycling.

(9) Maintain liaison and coordinate as necessary with county and state solid waste regulators.

(10) Maintain liaison with and request support from the major command on solid waste related issues.

(11) Submit Environmental Program Requirements (EPRs) to the major command to achieve solid waste management goals.

(12) Report solid waste management activities to the major command using the Solid Waste Annual Reporting system (SWAR).

(13) Review contracts related to solid waste management for environmental compliance.

(14) Provide guidelines on source reduction strategies, yard waste management, pollution prevention, and recycling to on-post residents and installation personnel.

(15) Report to the EQCC or other installation forum on a regular basis on issues related to solid waste management and recycling.

(16) Identify and monitor responsibilities of all providers of solid waste management services, whether contractors or in-house personnel. Examples of such responsibilities follow:

(a) Furnish and maintain containers as necessary to collect solid wastes (refuse) at specified locations. Label containers according to contract or installation requirements. Provide containers that are leak-proof with tight-fitting lids.

(b) Furnish and maintain containers to collect recyclables at specified locations. Label containers according to contract or installation requirements. Provide containers that are leak-proof with tight-fitting lids.

(c) Keep loads covered during handling and transport of refuse and recyclables. Take measures to prevent spillage, leakage, or blowing of paper.

(d) Immediately clean up any materials spilled during pickup operations or transport, according to contract or installation requirements.

(e) Immediately notify the installation environmental office of any unauthorized wastes discarded in refuse dumpsters or recycling containers. Unauthorized wastes include, but are not limited to: potentially hazardous wastes, including unused paints, thinners, solvents, or caustics; petroleum, oils and lubricants (POL); radioactive materials; regulated medical wastes; and explosive materials or ordnance.

(f) Replace lids on dumpsters and containers after collection.

(g) Comply with all other requirements listed in the contract specifications, if applicable, including reporting and Quality Assurance (QA) requirements.

j. Recycling Program/QRP Manager.

(1) Oversee daily operation of the recycling facility and all recycling operations.

(2) Hire and supervise personnel to accomplish recycling duties.

(3) Ensure proper training of facility personnel. Training may include AEDA certification if the installation operates a QRP that handles firing range scrap.

(4) Request, justify, and procure equipment necessary to perform recycling operations.

(5) Develop and manage contracts in support of the program.

(6) Develop, implement, and update SOPs for operation of the program.

(7) Establish and oversee a recyclable materials accounting procedure to track the materials processed/sold and a financial accounting system for the receipts and disbursements of funds.

(8) Address customer complaints regarding the recycling program.

(9) Monitor participation in the program and implement corrective measures when participation is poor.

(10) Implement an aggressive promotional and educational campaign for the recycling program.

(11) Maintain a list of recycling POC's in each activity or building and coordinate the program's activities and changes through them.

(12) Assist the solid waste manager in reporting recycling activities to the major command using the SWAR system.

(13) Report on the status of the recycling program to the EQCC or installation forum that addresses solid waste management and recycling issues.

k. Installation Safety Manager.

(1) Ensure compliance with state, Federal, Army, and other safety standards, guidelines, and training requirements related to solid waste management and recycling.

(2) Participate in the EQCC or installation forum that addresses solid waste management and recycling issues.

l. Environmental Quality Control Committee (EQCC) or Other Installation Forum. Include solid waste management issues on the meeting agendas. These meetings will provide a forum for planning, identifying needs and objectives, and coordination among various installation elements. Participation should include the Installation Commander and/or Garrison Commander; recycling program manager; DPW; Environmental Office, DRMO, DCA, DOC, DOL/Supply, Safety Office, Public Affairs, and Staff Judge Advocate.

m. Defense Reutilization and Marketing Office (DRMO).

(1) Accept qualified recyclable materials from the QRP, and reimburse installations the designated proceeds from the sale of recyclables in accordance with current DLA policy and DLA financial management regulations.

(2) Accept materials excluded from QRPs for recycling or other disposal, deposit the recycling proceeds, if any, to the U.S. Treasury, and report material sales data to the QRP within the required reporting time frame.

(3) Serve as the local representative of the DLA.

(4) Assist the recycling program manager by providing technical advice, performing market research, and selling recyclable commodities, when requested.

(5) Advise generating activities on the required turn-in procedures, including packaging, labeling, and transporting of materials to facilitate sales/recycling.

(6) Assume accountability for materials properly turned in for disposal, resale, or recycling.

(7) Periodically conduct sales, and/or make the DOD bidders list available to activities conducting direct sales of recyclables.

(8) Dispose of hazardous property generated by the installation.

(9) Maintain records concerning types and quantities of materials turned in, and proceeds for various resale/recycling activities.

n. Defense Finance and Accounting Service (DFAS). Process financial documents and vouchers forwarded from the DRMO or DOD Components. The proceeds are deposited into the installation QRP account as directed in accordance with 10 U.S.C. 2577. DFAS also tracks DD Form 1348-1, Disposal Turn-In Document, and ensures timely and accurate financial recording of sales of recyclables.

o. All Installation Organizations, Units, and Tenant Activities.

(1) Reduce the amount of solid waste generated through procurement of products with less or reusable packaging, buying only the amounts needed, investigating new recycling/ reuse opportunities, and altering operations to reduce wastes (e.g., using double-sided copies).

(13) Support recycling by procuring items with recycled materials content.

(3) Ensure safe and effective solid waste management through the proper storage of solid wastes and recyclables.

(4) Support the recycling program by identifying, collecting, separating, and removing contaminants from all potential recyclable materials.

(5) Designate a recycling coordinator for your activity to organize the recycling efforts, coordinate with the recycling program manager, and participate in the installation forum that addresses solid waste management and recycling issues.

(6) Coordinate with the installation environmental office on all matters involving solid waste management, Affirmative Procurement, recycling, or pollution prevention.

7. GENERATION OF SOLID WASTE AND RECYCLABLES.

DEFINITION OF SOLID WASTE

Solid waste, as defined in RCRA, is any garbage, refuse, sludge, or other discarded material resulting from industrial, commercial, institutional, and residential activity. Discarded materials include those that are disposed of, abandoned, recycled, or are inherently waste-like. Hazardous wastes are solid wastes that meet specific RCRA or state criteria involving hazardous characteristics or the presence of listed constituents. For the purposes of this ISWMP, hazardous wastes are not included. Hazardous wastes generated at the installation are addressed in the Hazardous Waste Management Plan.

WASTE CHARACTERIZATION

The basis for all solid waste management decision-making is a characterization of the wastes generated. The characterization involves identifying each element of the waste stream, identifying the primary sources of each element, and measuring the amounts generated for each. This may be accomplished through in-house recordkeeping, a contractor survey, or by Army support agencies. Resources used to gather this data include generator interviews, solid waste removal/disposal contracts, waste hauler records, disposal facility records, turn-in documents, records from the environmental office and DRMO, and interviews with key personnel. A waste characterization study may or may not have been performed at the installation, and may be beyond the scope of developing the ISWMP. Ideally, waste characterization data will be available to facilitate more meaningful planning.

a. Waste Characterization. The ISWMP should include characterization information for the following categories of solid waste.

(1) Residential Waste. Indicate the number of households or buildings serviced. Estimate the amounts of refuse disposed from on-post residents and the amounts of each material recycled.

(2) Commercial and Institutional Waste. List the major generators of commercial and institutional waste and identify the recyclable materials. Estimate the amounts of refuse and recyclable materials generated.

(3) Industrial (Non-hazardous) Waste. List the types and quantities, locations generated, and special handling/disposal requirements.

RESIDENTIAL WASTE

Residential waste typically includes wastes from single and multi-family dwellings, BOQ's, and troop housing. This waste may be the most easily characterized and measured, and usually consists of paper, glass, metal, plastics, food wastes, bulky items, furniture, and yard waste. In most cases, recyclable materials are segregated from other wastes for separate collection.

COMMERCIAL AND INSTITUTIONAL WASTE

In some cases, this type of waste is removed by a solid waste contractor and disposed of in an off-post landfill. Waste hauler records or landfill logs should provide estimates, although these may not be accurate. The best way to characterize and measure these wastes is to perform a generator survey. These include administrative offices, commissaries, food service operations, medical facilities (not including regulated medical wastes), warehouses, post exchanges, schools, and laboratories. Typical wastes include paper, food wastes, cardboard, clothing and textiles, furniture, and packing materials.

INDUSTRIAL WASTE

The best way to characterize and measure these wastes is to perform a generator survey. These may include materials discarded from industrial operations and manufacturing processes, such as scrap metals, non-hazardous solvents, greases and oils. Examples of activities that are sources of industrial waste are: motor pools, paint shops, service stations, maintenance shops, craft shops, and auto craft shops.

(4) Construction/Demolition (C&D) Waste. Include a C&D Waste Management Plan as a separate document, or as part of the ISWMP. The generation of C&D waste will greatly affect the installation's overall generation rate and hamper the attainment of the solid waste MoM. The C&D plan should therefore maximize the diversion of these wastes from the solid waste stream. The plan should define policies and procedures for segregating all usable elements of the C&D waste stream for reuse, resale, recycling, or donation prior to consideration of the disposal option. Army policy (currently in draft) will require C&D Waste Management Plans to have the following elements:

(a) C&D waste management program goals.

(b) Anticipated installation and contractor benefits.

(c) Waste management resources, to include listings of local and regional haulers, recyclers, salvage, and other outlets for C&D waste materials.

DEMOLITON OR DECONSTRUCTION?

Army policy calls for minimizing the amount of disposal of solid wastes in landfills or incinerators, and promoting the use of environmentally preferable construction materials including those with recovered content. The selective method of disassembling buildings to preserve and separate potentially recyclable materials is called deconstruction.

Since most major construction/demolition projects are performed by contractors, the best way to obtain information on the associated waste streams is by reviewing the contracts or contacting the COR. Typical wastes include lumber, timber, reinforcing steel, pipes, wires, concrete, brick, plaster, metal, wall board, roofing, insulation materials, and asphalt. Every effort should be made to salvage materials for sale/reuse or recycle them in lieu of landfilling or incineration.

(d) Requirements for contractor C&D waste management plans.

(e) Available alternatives to landfilling and/or incineration of waste.

(f) Contractor incentives to promote waste reduction.

(g) Procedures for completing economic assessments of alternatives to landfilling and/or incineration of C&D waste.

(h) Methods for reducing the amount of C&D packaging and packing waste on projects.

(i) Methods for reducing waste in off-site fabrication and material handling facilities.

(j) Procedures for collecting and depositing waste on project sites, to include designated locations for waste receptacles, sorting or separating methods, handling and transporting of wastes, special handling requirements such as permits, and schedules for waste pickup.

(5) Yard Waste. Estimate the quantity of yard wastes generated by grounds keeping activities and residential yard maintenance.

YARD WASTE

Data on yard waste generation rates may be available at the installation compost facility if one exists. If yard wastes are composted in a municipal compost facility, the data may be available at that facility or the data may be maintained by the DPW grounds keeping activity. If yard wastes are not segregated from the waste stream, it is difficult to estimate generation rates. Yard wastes typically include grass, weeds, and trimmings from trees and shrubbery.

(6) Other Special Wastes. Indicate the types and quantities of non-hazardous, special wastes generated (wastes that are not disposed as refuse and are not handled through the recycling program).

ADDITIONAL INFORMATION - SPECIAL WASTES

Commercial and industrial activities on the installation can result in the generation of certain non-hazardous solid waste that cannot be disposed of as general refuse. Information on management of these wastes can be obtained from either the solid waste program manager or the hazardous waste program manager. Some examples of special wastes are: waste oil, absorbents with petroleum produces, tires, ash, photographic chemicals, scrap metal, adhesives, non-RCRA cleansers, latex paint, water treatment/wastewater treatment sludges, dead animals, pallets, batteries, antifreeze, asbestos, kitchen grease, pesticide containers, pollution control residuals, and septic tank

2. Waste Generation Rates. Although comprehensive waste characterization may be beyond the scope of developing the ISWMP, it is important to have some estimate of waste quantities. The ISWMP should estimate generation rates in units of weight (pounds or tons) rather than volume (cubic yards), since it is an Army policy to collect standardized data by weight.

ESTIMATING WASTE GENERATION RATES

There are several methods of measuring and recording the amounts of solid waste generated.

- One method of measuring overall solid waste generation (excluding recyclables) is weighing refuse collection vehicles as they enter and leave the installation. Unfortunately, most installations do not have truck scales. Collection vehicles are typically weighed at disposal sites; however, a given load may include wastes from sources other than the installation. Therefore, waste hauler records may not accurately reflect an installation's generation rate.

- Systematic waste surveys over a period of time are another way to characterize and measure a particular waste stream. Factors that must be considered in the study are seasonal and climatic variations, large influx or exodus of families and soldiers, and changes in recycling efforts.

- Many installations measure solid wastes by converting container volumes to weights. While this may be one of the easiest methods, drawbacks include the inability to accurately estimate the container fullness and the fact that different waste types have different volume/weight ratios. These factors, if not taken into consideration, reduce the accuracy of using this conversion process to obtain the data.

- Another way to estimate quantities of specific wastes is to compare to typical municipal waste stream breakdowns. This method can only be used for a few waste categories, and may not accurately address the unique wastes generated on Army installations.

8. SOURCE REDUCTION.
Document all of the source reduction practices at the installation and strategies for further waste reduction. Also describe any occurring or planned procurement efforts or programs. Source reduction may include procurement programs, innovative buying policies, pollution prevention, material reuse, donation, process alterations, and management practices that minimize waste generation.

WHY SOURCE REDUCTION?

In the Pollution Prevention Act of 1990, EPA designated source reduction as the highest priority for effectively managing the solid waste stream. Benefits are derived from reducing solid waste in the form of natural resource conservation, reduction in treatment/disposal costs, and removal of risks and liabilities associated with disposal. Source reduction differs from recycling in that it focuses on reducing the waste stream at the source, to include procurement policies (environmentally preferable purchasing) and the way products are used (and reused). Source reduction, according to the EPA definition, also includes the reuse of materials with little or no "processing" involved. Planning and implementing source reduction measures play a vital role in meeting waste reduction goals.

a. Purchasing Programs. Provide examples of the installation's current and planned buying practices that will accomplish source reduction and/or improve recycling markets.

(1) Environmentally Preferable Purchasing (EPP). This may include:

(a) Procuring materials with less packaging (see box).

(b) Purchasing materials that are recyclable.

(c) Purchasing items that are reusable.

ENVIRONMENTALLY PREFERABLE PURCHASING

EPP, according to EO 13101, is buying "products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose." All installation activities involved in purchasing, including government credit card holders, should be made aware of and expected to follow the environmentally preferable buying practices. References such as the GSA Environmental Products Guide and the DLA catalog of environmental products should be used to make purchasing decisions. Affirmative Procurement, or buying materials with recycled content, is just one aspect of a purchasing program. Others include purchasing materials that produce less waste and materials that are themselves easily recyclable. It's a good idea to develop a program to educate the consumers on the installation to buy "environmentally friendly" products.

WHAT ABOUT THE FARS?

The Federal Acquisition Regulations, or FARs, were amended in 1997 to incorporate the Affirmative Procurement requirements of RCRA Section 6002 and EO 12873. FAR Part 23 sets policy regarding recovered material certification, estimation of recycled content, and waste reduction; FAR Part 4 requires paper documents to be printed/copied double-sided on recycled paper.

(2) Affirmative Procurement. Under Section 6002 of RCRA, Federal agencies using appropriated funds to purchase certain items are to establish procurement programs to allow the use of recovered materials to the maximum extent possible (see box). Designated items include paper and paper products, cement and concrete, carpet, floor tiles, fiberboard, plastic desktop accessories, binders, toner cartridges, trash bags, hydraulic mulch, printer ribbons, plastic envelopes, and pallets. A complete list of the designated items is shown in the Appendix. Although an Affirmative Procurement program may not actually reduce amounts of wastes generated, it is considered a key component of integrated solid waste management. Buying products with recycled content "completes the circle," stimulating the market for recycled materials, conserving natural resources, and saving energy otherwise used to make products from virgin materials.

REDUCED PACKAGING -
A GOOD PLACE TO START

It is estimated that over one-third of the solid waste stream consists of packaging materials, including various types of cardboard, paper, plastics, and styrofoam. Therefore, reducing or eliminating this waste component will significantly reduce the wastes generated. Purchasing items with reduced packaging (or reusing the packing materials) is an effective means of reducing this waste. The installation should reduce packaging waste by evaluating purchases according to the following packaging preferences:

- ✓ *Products sold in bulk, with little or no packaging*
- ✓ *Minimal packaging or use of lightweight packing materials*
- ✓ *Returnable packaging (returned to manufacturer)*
- ✓ *Reusable or refillable packaging*
- ✓ *Recyclable, homogenous packaging (as opposed to layers of several materials)*
- ✓ *Packaging made with recycled content materials*

AFFIRMATIVE PROCUREMENT

Executive Order 13101 - Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition states that "agencies shall comply with executive branch policies for the acquisition and use of environmentally preferable products and services and implement cost-effective procurement preference programs favoring the purchase of these products and services." EPA was required to designate products that are or can be made with recovered materials, and to recommend practices for buying these products. To meet this requirement, EPA published Comprehensive Procurement Guidelines (CPGs) to designate products and specify recycled content recommendations. EPA also issues guidance on buying recycled content products in the Recovered Materials Advisory Notices (RMANs).

The first CPG contained procurement guidelines for 24 products. It was published with the associated RMAN in the Federal Register on 1 May 1995 with an effective date of 1 May 1996. The second CPG and RMAN (CPG II and RMAN II) were published in the Federal Register on 13 November 1997. CPG II provided purchasing requirements for another 12 items that became effective on 13 November 1998. CPG III, published in August 1998, proposed the designation of 19 more items. A list of all of the designated and proposed items is provided as the Appendix and should be included in the ISWMP.

The DOD is responsible for developing and implementing an affirmative procurement program. In doing so, DOD must ensure that the purchasing guidelines are followed for the designated items and develop a system for tracking and reporting affirmative procurement efforts. The EO requires that "responsibilities for preparation, implementation, and monitoring of affirmative procurement programs are shared between the program personnel and acquisition and procurement personnel." It is therefore the responsibilities of both procuring parties and generators (users) to follow the CPGs, associated RMANs, and overall intent of the Executive Order. The effectiveness of the program relies heavily on participation at the installation level in following those EPA guidelines. Detailed guidance is available in the CPGs and RMANs. Other guidance is available in a USEPA publication titled "Greening the Government, A Guide to Implementing Executive Order 13101."

b. Pollution Prevention. Reference the installation's pollution prevention plan, and briefly list the ways that material substitutions, process changes, or other methods are used to reduce the toxicity or quantity of wastes generated.

POLLUTION PREVENTION

The Pollution Prevention Act of 1990 established P2 as a national objective in reducing wastes at the source. This is achieved by lessening the toxicity and/or the quantity of the waste generated, through such tools as material substitution, use of raw materials, procurement policies, or process changes. Most of the P2 measures taken will effectively reduce the generation of solid waste. In some cases, however, reducing the use of hazardous constituents in a process results in the creation of more non-hazardous solid waste. This is an acceptable trade-off. The installation should maintain a separate P2 plan (possibly as part of the Hazardous Waste Management Plan) in accordance with Army requirements.

c. Reuse. Identify areas where materials may be reused rather than discarded. Include plans for creating a waste exchange within the installation where activities can transfer usable items to other activities. Examples include the reuse of packaging material, to include styrofoam peanuts, bubble wrap, and cardboard boxes in good condition.

d. Management Practices. Identify everyday management practices used (or planned) that reduce wastes. Describe how personnel are informed of these practices. Examples are shown in the box below.

ADMINISTRATIVE WASTE REDUCTION PRACTICES

✓Eliminate stockpiling materials; order only what will be used
✓Using e-mail in place of written memos whenever possible
✓Saving e-mail messages to files rather than printing out
✓Sending mail in reusable "shotgun" envelopes
✓Reusing file folders (put stick-on labels over previous folder labels)
✓Using routing slips in place of multiple copies
✓Using old documents for scratch paper
✓Using word processing features to condense pages, using less paper
✓Using "print view" features to reduce printing mistakes and paper waste
✓Returning toner cartridges for remanufacturing
✓Making double-sided copies
✓Providing proper maintenance for copiers and printers
✓Saving binders for reuse
✓Using reusable materials rather than disposable materials (i.e., coffee mugs instead of styrofoam cups)

9. INSTALLATION RECYCLING PROGRAM. A list of possible topics to be addressed in the ISWMP pertaining to recycling follows. More information may also be found under Section 12, SOLID WASTE MANAGEMENT FACILITIES, paragraph f, Recycling Facilities.

RECYCLING PROGRAMS - THE QRP

Section 705 of Executive Order 13101 mandates that each agency that has not already done so shall initiate a program to promote cost-effective waste prevention and recycling of reusable materials in all of its facilities. This takes the form of a QRP when funds received from the sale of recyclables are returned to the installation's recycling account, and in turn distributed to environmental, safety, and MWR programs. The EO also requires that each installation have a designated recycling coordinator.

a. Program Status. Indicate whether the program is a "Qualifying Recycling Program." See text box above.

b. Program Structure. Indicate the proponent organization and general type of recycling program (curbside, mixed or segregated collection, labeled dumpsters, drop-off centers, etc.).

c. Recycled Materials. Identify all of the materials that are recycled on the installation and the mechanism through which they are recycled. For example, indicate that paper and cardboard are recycled through the QRP, and batteries and tires are recycled through the DRMO. Identify recyclable materials that may be added in the future.

d. Segregation, Storage, and Collection Procedures. Indicate how recyclable materials are stored and collected. Some or all of this information may be documented in the solid waste storage and collection section of the plan.

(1) List the turn-in or preparation requirements for all recyclables.

(2) Specify container and labeling requirements for all recyclables collected.

(3) If recyclables are commingled with other solid wastes, indicate how and where the segregation/processing will occur.

(4) If firing range scrap is collected and processed through the QRP, include the following: a list of personnel authorized to certify firing range scrap from range clearance as

safe; procedures and responsibilities for identification, collection, and processing of firing range scrap; and procedures for turning in other AEDA scrap to DRMO [per reference 2. l(3)].

e. Contracted Operations. Identify whether the collection, processing, or sale of recyclables is performed by a contractor. Indicate how revenue is returned to the installation (i.e., direct payment, contract discounts, rebates).

f. Facilities, Equipment, and Personnel. Describe the facilities, equipment, and personnel directly involved in operation of the QRP. Include plans for new or expanded facilities, new equipment, or personnel changes.

g. Regulations, Policies, and Procedures. List the installation regulations, policies, and procedures established for the recycling program. They may be incorporated into an installation regulation, policy, or Standing Operating Procedures (SOP). It may be appropriate to include some or all of these documents as appendices in the ISWMP.

h. Publicity and Promotion. Identify the mechanisms for promoting the recycling program to installation elements, tenant organizations, and on-post residents. Details on promoting the QRP may be documented as a separate section. See Section 13.

i. Relationship with Local Recycling Programs. Indicate whether recycling programs have been established in the local community, and to what extent the installation is participating or plans to participate. Section 705 of Executive Order 13101 states that government agencies shall consider cooperative ventures with state and local governments to promote recycling and waste reduction in the community. Army policy prohibits using on-post facilities for acceptance of off-post materials or wastes.

j. Market Research. Identify who is responsible for investigating local and national markets for recycled materials. Briefly describe the procedures for researching markets and locating vendors.

k. Funding and Financial Accountability. Describe funding mechanisms and procedures for operating the recycling program. Briefly describe the accounting procedures associated with the sale of recyclables and the distribution of proceeds.

l. Calculation of Diversion Rate. Outline the method for calculating the solid waste diversion rate in accordance with the DOD MoM (see text box).

m. Recordkeeping. Describe the documentation procedures associated with management of the QRP to include financial management.

DIVERSION RATE CALCULATION

The diversion rate is the rate at which non-hazardous solid waste is diverted from entering a disposal facility. Disposal facilities include landfills (both solid waste and inert) and incinerators. Composting, mulching, recycling, reuse, and donation are generally accepted waste diversion methods. The diversion rate equals:

(R/(R+L))*100 = diversion rate (per cent)

R = amount (in tons) of non-hazardous solid waste (including construction and demolition debris) that is composted, mulched, recycled, reused, donated, or otherwise diverted from a disposal facility.

L = amount (in tons) of solid waste (including construction and demolition debris) transferred to a disposal

10. COMPOSTING. The ISWMP should describe the current composting activities and should address any plans for new or expanded composting.

THE DIRT ON COMPOSTING

Composting is an aerobic degradation process that decomposes plant and other organic waste under controlled conditions. Programs may consist of yard wastes only (leaves and grass clippings) or may be a compostable municipal solid waste program, using yard wastes, food wastes, and other degradable organic matter. Composting procedures include collecting wastes, forming wastes into piles, and aerating the material until an organic-rich material is produced. Backyard composting is operated by individual homeowners with little or low technology equipment. Centralized programs are accomplished at a centralized location and operated by installation personnel using mechanical equipment to turn over (aerate) the pile. End uses include mulches and soil conditioners used in landscaping and gardens.

a. Yard Waste Composting.

(1) State whether the program is a "backyard" type or centralized.

(a) If composting is a backyard program, estimate the quantity of yard waste diverted from disposal and the number of participants.

(b) If a centralized program exists, state the quantity of yard wastes collected, the frequency of collection, the size of the compost area, the management procedures used, the equipment used to aerate the piles, and end uses for the material.

(2) Identify alternative end uses for the compost product if a surplus exists.

(3) Describe any state permit/operational requirements for composting and discuss how they are implemented and monitored.

(4) Describe educational and promotional programs associated with composting or reference the section on Program Promotion (see Section 13).

(5) Determine cost avoidance associated with the diversion of yard waste from the solid waste stream and with the reduced purchasing of compost products from outside sources.

b. Municipal Solid Waste Composting.

(1) Describe the facility used to include building size, mechanical equipment, storage and processing areas.

(2) Describe the operating procedures and include the SOP as an appendix.

(3) State the facility's capacity in cubic yards and determine the monthly or annual tons of input and product.

(4) Provide details on the waste process stream, including any pre-processing for recyclables and non-compostable materials, and the MSW composting digester (in-vessel) systems or chambers for windrow piles.

(5) Describe end uses for the materials and identify additional end uses if surplus compost exists.

MUNICIPAL WASTE COMPOSTING

MSW composting is a developing waste management technology and may not be in use at most installations. A large amount of manual and mechanical pre-processing may be required to segregate the compostable portion from the waste. The compostable portion (yard wastes, food wastes, and paper) can comprise from 30 to 60 percent of the waste stream. Removal of other recyclables may take place at the source, in a curbside collection, or as a pre-screening stage. MSW composting usually involves the construction of "digesters" or in-vessel systems or enclosed chambers for windrow piles with mechanical turning equipment.

(6) Determine cost avoidance associated with the diversion of yard waste from the solid waste stream and with the reduced purchasing of compost products from outside sources.

(7) Describe educational and promotional programs associated with composting or reference the section on Program Promotion (see Section 13).

11. SOLID WASTE AND RECYCLABLES STORAGE, COLLECTION, AND DISPOSAL. This section is organized according to the major waste types because the different waste types are often stored, collected, or disposed in different ways.

a. Residential Wastes/Recyclables.

(1) State whether residential wastes and recyclables are collected using in-house resources or by contract. If contracted, include a copy of the collection contract as an appendix.

(2) List the types, sizes, and locations of solid waste/recycling containers.

(3) Include the collection schedules as an appendix.

(4) If collection is accomplished using in-house resources, describe the equipment and personnel associated with the service.

(5) Detail the procedures for closing, cleaning, and maintaining the containers, or describe the inspection program if the responsibility lies with a contractor.

(6) List any specific storage requirements such as segregation or preparation of recyclables, segregation of yard wastes, or segregation of bulky wastes.

(7) Describe the recordkeeping procedures associated with solid waste collection. Haulers should be required to measure the wastes collected, either by using a truck scale or estimating the amounts of wastes during each pickup (Forms DA 3916 and DA 3917 - see Section 14, paragraph d for more information).

(8) State the disposal method for the wastes and refer to Section 12.

b. Offices and Other Facility Wastes and Recyclables. These may be addressed with the residential wastes if storage and collection procedures are similar (performed by the same contractor, for example.)

(1) State whether office wastes and recyclables are collected using in-house resources or by contract. If contracted, include a copy of the collection contract as an appendix.

(2) Describe the janitorial service provided for refuse and recyclables collection.

(3) List the types, sizes, and locations of solid waste/recycling containers.

(4) Include the collection schedules as an appendix.

(5) If collection is accomplished using in-house resources, describe the equipment and personnel associated with the service.

(6) Detail the procedures for closing, cleaning, and maintaining the containers, or describe the inspection program if the responsibility lies with a contractor.

(7) Describe the mechanism for evaluating whether containers are the right size and whether wastes are collected at appropriate frequencies. Examples are performing routine inspections of containers just prior to waste pickups, or requiring the waste hauler to record any problems with waste storage.

(8) List any specific storage requirements such as segregation or preparation of recyclables or segregation of bulky wastes.

(9) Describe the recordkeeping procedures associated with solid waste collection. Haulers should be required to measure the wastes collected, either by using a truck scale or estimating the amounts of wastes during each pickup (Forms DA 3916 and DA 3917).

(10) State the disposal method for the wastes and refer to Section 12.

c. Yard Wastes. Describe the procedures for segregating, containerizing, and collecting yard wastes. Specify number and sizes of containers. Include the collection schedule as an appendix. Address both residential yard waste handling and post-wide facilities grounds keeping waste handling, as these may be handled differently. State whether or not yard wastes are composted and, if so, refer to Section 10.

d. Construction/Demolition Wastes and Recyclables. Describe the equipment and procedures used for storage and collection of C&D wastes. Identify any recyclables that are separated from the waste materials. For construction projects, determine if procurement guidelines are followed for EPA-designated items required to contain recovered materials. If not, the installation should plan for how this can be accomplished and document it in the ISWMP. If the installation operates a construction/demolition landfill, refer to Section 12.

e. Special Wastes. Describe the storage and handling of the special wastes identified in Section 7a(6). Identify any special wastes that are recycled and by what mechanism they are recycled (e.g., under contract to the environmental office, through DRMO, through the QRP). For special wastes that are not recycled, state how and where the materials are disposed. Include any plans for the future recycling of special wastes currently being disposed of. Some examples of special wastes are: waste oil, absorbents with petroleum products, tires, ash, photographic chemicals, scrap metal, adhesives, non-RCRA cleansers, latex paint, water treatment/wastewater treatment sludges, dead animals, pallets, batteries, antifreeze, asbestos, kitchen grease, pesticide containers, pollution control residuals, and septic tank wastes.

12. SOLID WASTE MANAGEMENT FACILITIES. The ISWMP should include descriptions of any solid waste management facilities used by the installation. Provide the types of information listed below.

a. On-Post Solid Waste Landfills (Sanitary Landfills).

DISPOSAL FACILITIES

After planning for optimal source reduction and recycling on the installation, the ISWMP must address disposal of what remains of the waste stream. The installation's options are often determined by the existing facilities available for their use. These may be regional, local, or on-post facilities, and may include landfills, incinerators, or waste-to-energy plants.

(1) Landfill Description. Describe the landfill to include the size in acres, slope of the site, and soil and ground-water conditions.

(2) Landfill Location. Include a map showing the location of the landfill. Reference the grid coordinates, road intersections, or other identifying information.

(3) Permit Status. Describe type of Landfill Permit, permit number, administering agency, expiration date.

(4) Current Disposal Rate and Capacity. Indicate number of tons received each month, number of cells or trenches (full and remaining), and projected life expectancy. Attach a copy of landfill permit and operational standards.

(5) 10- and 20-Year Disposal Rates. Project future disposal rates using both the present disposal rate and future disposal rate (allowing for increased recycling and waste stream reduction). Compare the difference in the landfill life expectancy based on current versus proposed lower disposal rates.

(6) Types of Wastes Accepted/Excluded. List the waste types that are accepted and excluded from the landfill. For example, hazardous wastes and bulk liquid wastes (greater than household quantities) must be excluded from the landfill except where permit specifications allow them.

(7) Landfill Operation and Environmental Controls. As of 9 October 1993, new and existing solid waste landfills must meet the operating criteria specified in 40 CFR 258, Subpart C. Describe the landfill operation by indicating how the installation complies with the following requirements. Include a copy of the landfill SOP as an appendix.

(a) Excluding the Receipt of Hazardous Wastes. Describe the procedures for random inspections, recordkeeping, and training of landfill personnel to recognize potential hazardous wastes.

(b) Cover Material. Describe the daily cover procedure. The current standard is 6 inches of earthen cover at the end of each working day.

(c) Disease Vector Control. Indicate the methods for controlling insects and animals at the landfill.

(d) Explosive Gases Control. Indicate if there is any gas venting or monitoring systems in place.

(e) Air Release Control. Indicate if any open burning is conducted and describe the permitting procedure associated with this activity. Open burning at solid waste landfills is severely restricted. Federal regulations (40 CFR 258.24(b)) allow burning of land clearing debris. State restrictions must be followed where applicable.

(f) Access Control. Indicate how the installation controls public access to the site (fencing, manned guard house, etc.). Restricted access is required to prevent illegal dumping and other unauthorized activities.

(g) Run-on/Run-off Control. Describe the run-on/run-off control structures at the landfill. A system must be in place to restrict water from entering the active portion of the landfill and control water running off the active portion of the landfill.

(h) Recordkeeping Requirements. Describe the recordkeeping that is performed relative to management of the landfill. Requirements specified in 40 CFR 258.29 must be met.

(i) Utilities. Indicate whether the site is serviced with water, electric, rest rooms, etc.

(j) Ground-Water Monitoring and Corrective Action. Describe the ground-water sampling and analysis program, statistical analysis of results, and the detection/assessment monitoring plan as required by 40 CFR 258.

(8) Closure/Post Closure. Indicate whether the installation has a landfill closure and post closure care plan that addresses final cover, operation of leachate collection system, and ground-water/methane monitoring. Include a copy of the plan as an appendix if it exists.

(9) New Landfills and Lateral Expansions. If new landfills or lateral expansions are approved, briefly describe the plans and indicate conformance with the design criteria in the Federal regulations (40 CFR 258, Subpart D). *(NOTE: AR 420-49 states that new landfills or*

landfill expansions on Army installations will not be programmed where municipal or regional systems are available until all alternatives are explored.)

(10) Percentage of Waste Stream. Determine the percentage of the installation's waste stream currently being disposed of in the on-post sanitary landfill.

b. Municipal/County/Regional Landfills. For all municipal/county/regional landfills, provide the following information (available from the state or county solid waste agency, or the landfill operators). This information should be provided in the ISWMP regardless of whether the off-post landfills are currently used by the installation. Refer to Section 12a for further explanations of the following subheadings.

(1) Landfill Description.

(2) Landfill Location.

(3) Permit Status.

(4) Disposal Rate, Capacity, and Life Expectancy.

(5) Types of Wastes Accepted/Excluded.

(6) Landfill Operation.

(7) Environmental Controls.

(8) Percentage of Waste Stream.

c. C&D Debris Landfills. Although requirements for construction debris landfills vary with each state, Federal regulations (40 CFR 257) contain general requirements. The following elements should be addressed in the ISWMP for on- or off-post construction debris landfills. Refer to Section 12a for further explanations of the following subheadings.

(1) Landfill Description.

(2) Landfill Location.

(3) Permit Status.

(4) Current Disposal Rate and Capacity.

(5) 10- and 20-year Disposal Rates and Capacities.

(6) Types of Wastes Accepted/Excluded.

(7) Landfill Operation.

(8) Environmental Controls.

(9) Percentage of Waste Stream.

d. Incinerators/Waste-To-Energy Plants. This category includes incinerators and waste conversion plants, and falls under the EPA definition of volume reduction processes. The DOD considers these to be disposal facilities, and wastes processed are not considered diverted from the waste stream, nor do the quantities count towards the MoM. However, some states provide a fixed-percentage credit towards reduction goals when waste conversion is used in lieu of landfill disposal. Provide the following information (available from the plant or the state/county solid waste agency). Refer to Section 12a for further explanations of the following subheadings.

(1) Facility Description.

(2) Facility Location.

(3) Permit Status

(4) Processing Rate and Capacity.

(5) Waste Types Accepted/Excluded.

(6) Facility Operation.

(7) Environmental Controls.

(8) Percentage of Waste Stream.

e. Transfer Stations. Transfer stations are centralized facilities for unloading wastes from several small collection vehicles and densely loading into larger vehicles for hauling to more distant processing, volume reduction, or disposal facilities. If a transfer station is used by the installation (either on-post or off-post), provide the following information in the ISWMP. Refer to Section 12a for further explanations of the subheadings.

(1) Facility Description.

(2) Facility Location.

(3) Permit Status.

(4) Existing Storage Capacity.

(5) Projected Storage Capacity.

(6) Facility Operation.

(7) Environmental Controls (i.e., litter, runoff).

(8) Segregation and Storage of Recyclables.

(9) Percentage of Waste Stream.

f. Recycling Facilities. On-post recycling facilities are described in Section 9. In this section, provide information about off-post recycling facilities used by the installation to include:

(1) Facility Description.

(2) Facility Location.

(3) Permit Status.

(4) Processing Rate and Capacity.

(5) Recyclable Materials Accepted/ Excluded.

(6) Facility Operation.

(7) Percentage of Waste Stream.

13. PROGRAM PROMOTION AND TRAINING.

a. Promotional Tools. List all of the tools that will be used to promote various aspects of the solid waste program. Some examples are: fliers, posters, fact sheets, electronic mail bulletin boards and messages, articles in newspapers and maga- zines, marquee advertisements, closed circuit television advertisements, school visits, promo- tional events (e.g., participation in Earth Day and America Recycles Day), and new employee and new resident orientation programs.

PROMOTING THE PROGRAM

All aspects of the solid waste management program require some education and/or promotion. Rather than address promotion in numerous places through the ISWMP, it can be addressed in a single section as a separate management function. Education and publicity are essential elements of a successful solid waste program. Promotion is particularly important in the areas of waste reduction, recycling, composting, and Affirmative Procurement; therefore, promotion of each of these areas should be addressed to identify how these will be promoted and by whom. The ISWMP should detail all of the ways that information and advertisements can reach employees and on-post

b. Public Awareness. Discuss ways that the installation will heighten public awareness of their solid waste programs. Assign responsibilities for outreach programs to the appropriate personnel or activities. Some examples follow.

WHY PUBLIC AWARENESS?

Public education is an integral part of a solid waste management program, particularly a recycling program. On most Army installations, the public has daily interactions with the soldiers and civilians who work there. Waste-generating operations directly affect both the workers and surrounding communities. Legislation such as the Emergency Planning and Community Right to Know Act has reinforced the need to keep our neighbors informed of our activities, and has heightened the general awareness of the public sector.

(1) Public Meetings. Document plans to attend and/or hold public meetings on solid waste management issues as they relate to health, safety, or other environmental concerns at the facility or in the surrounding community.

(2) Community Events. Describe the installation's involvement in community-sponsored events such as Earth Day celebrations, America Recycles Day, and pollution prevention fairs.

(3) Media Information. Identify potential sources for news releases. Sources may include installation or local newspapers, closed circuit or local television stations, and/or magazines. *(NOTE: Events such as elimination of a waste stream, attainment of waste reduction goals, recycling initiatives, or positive progress in the recycling program are examples of newsworthy items.)*

(4) Schools Outreach Programs. Identify current programs and potential opportunities to participate in functions at local schools, such as science fairs, school presentations, poster coloring contests, recycling drives, and mentoring programs.

c. Promotional Strategies by Program Area. This section should identify the activities or individuals that are responsible for promoting each of the following program areas: source reduction, Affirmative Procurement, recycling, and composting. Also, for each program area, identify other offices that will assist and support the dissemination of information and advertisements. Detail promotional methods specific to each program area. Examples of specific methods for different program areas are: using building points of contact (monitors) to disseminate *recycling* instructions, advertising free *compost* mulch to on-post residents, including *Affirmative Procurement* as a topic in the credit card purchasing training, and providing a list of consumer *source reduction* measures to housing occupants.

TRAINING - WHAT YOU NEED AND WHERE TO FIND IT

Proper and relevant training is integral to the success and safety of solid waste management operations and recycling programs. Training programs may be in the form of formal training courses, correspondence courses, hands-on applications, or attendance at seminars and conferences. The following are examples of training that may be beneficial to installation solid waste management personnel.

Recycling. Training the recycling manager keeps him/her informed of new technologies and opportunities to recycle or otherwise reduce wastes. A recommended source is the National Recycling Coalition/Office of Federal Environmental Executive annual conference, held each year in September. The ALMC offers a Defense Metal Identification and Recycling course for recycling managers. Also, AEDA training is offered by the U.S. Army Corps of Engineers for identification/ segregation of firing range scrap in QRPs. Call (256) 895-7448 for information.

Buy Recycled/Affirmative Procurement. Training on this subject is designed for environmental staff, procurement and logistics personnel, government credit card holders, and contracting officers. USACHPPM [(410) 436-2024] has developed an onsite AP seminar available to all installations and facilities. Maryland Environmental Services [(410) 974-7254] in conjunction with the Buy Recycled Training Institute [(202) 861-6739] also offers training on buying recycled.

Solid Waste/Pollution Prevention. Solid waste management alternatives, new technologies, and P2 initiatives are rapidly changing areas. Recommended sources are the Solid Waste Association of North America annual conference (WasteCon), the Joint Services Pollution Prevention conference, and the National P2 Roundtable conference. Conference information is available through the Defense Environmental Network Information and Exchange (DENIX) web site, at <http://denix.cecer.army.mil/denix/denix.html>. The ALMC also offers a course on P2 in the Acquisition Process <www.almc.army.mil>.

New Employee Training. Training programs for new employees may include sections on source reduction, recycling, Affirmative Procurement, and overall environmental awareness. The ALMC offers basic environmental training courses <www.almc.army.mil>

Specific Job Training. Specific training and/or certification may be required for certain job descriptions, such as asbestos work, solid waste handling, operation of machinery (such as balers or crushers), and transportation of wastes.

d. Training.

(1) Identify jobs in solid waste management that require job-specific training. Describe how training is accomplished and tracked.

(2) Document current or planned training events or programs associated with solid waste management.

(2) Describe aspects of solid waste management that are addressed in new employee and new resident orientation programs.

14. RECORDKEEPING AND REPORTING.

a. Solid Waste Annual Reporting System (SWAR).

SWAR

The Solid Waste Annual Reporting system, or SWAR, is a DOD system to track and report installation solid waste and recycling data. The system also compares data with DOD MoMs and provides trend analysis capabilities. As of April 1999, installations are required to submit quarterly reports through their MACOM, who in turn reports to HQDA. For more information, contact the Defense Environmental Security Corporate Information Management (DESCIM) Program Manager at (703) 325-0002, or visit the DESCIM web site at

http://denix.cecer.army.mil/denix/Public/news/DESCIM

(1) Identify the person(s) responsible for completing SWAR information and reporting it to the MACOM representative (see text box for more information). Ensure proper training is received for person(s) responsible for tracking/inputting SWAR information.

(2) Identify the installation elements (DPW, MWR, contractors, etc.) that need to provide input so that all installation-generated wastes, waste diversion, and recycling quantities are captured and submitted into SWAR.

b. C&D Resource Recovery Reporting.

(1) Reference installation policies and procedures ensuring the application of procurement, salvage, reuse, resale, and recycling techniques in C&D activities. Include reporting mechanisms used internally by the installation.

(2) Include the following reporting requirement for each C&D project completed at the installation.

(a) Type and amount of material salvaged for installation reuse.

(b) Type and amount of material salvaged for resale, and resale mechanism.

(c) Type and amount of material recycled, and recycling mechanism.

(d) Type and amount of material disposed, and method of disposal.

REPORTING REQUIREMENTS FOR C&D PROJECTS

Army Policy (currently in draft) requires that installations develop and approve C&D waste management plans. For each C&D project, installations shall monitor and document contractor implementation of the plan, and prepare an information memorandum providing the overall results. The memorandum must include: the type and amount of material salvaged for reuse or resale, recycled, disposed by landfilling, and/or incineration; the amount of any earned revenue and the savings projected from disposal cost avoidance; the overall cost benefit to the project; and the general effectiveness of the installation program. Memoranda will be submitted annually to HQDA on a specific form (to be issued with final Army Policy letter) (reference

(e) Earned revenues from sale or recycling.

(f) Projected savings from disposal cost avoidance (include transportation costs, tipping fees, etc.).

(g) Overall cost benefit to the project resulting from C&D management.

c. Affirmative Procurement Reporting. List policies, procedures, and person(s) responsible for monitoring, tracking, documenting and reporting Affirmative Procurement statistics. Such statistics may include total dollars spent on CPG items and percentage containing required recycled content, credit card expenditures meeting Affirmative Procurement guidelines, and purchases exempt or otherwise unable to meet requirements.

TRACKING AFFIRMATIVE PROCUREMENT

With the issuance of EO 13101, all Federal agencies (including DOD) have the responsibility for developing tracking and monitoring systems to demonstrate compliance with Affirmative Procurement mandates. A White House Task Force is dedicated to devising methods to implement these requirements of the EO. At the time of publication, there was no specific guidance available for installations to begin this tracking process. However, the ISWMP should include this section and update the procedures and

d. Refuse Collection and Recycling Reporting. Identify procedures and person(s) responsible for completing the following reports, required by AR 420-49. These may be in-house or contracted responsibilities.

(1) DA Form 3916 (Daily Log of Truck Trips for Refuse Collection and Disposal). Entries recording refuse weight (tons) will be made daily by collection truck drivers. All entries will be totaled monthly on DA Form 3917 (Refuse Collection and Disposal) by collection supervisors.

(2) DA Form 3917 (Refuse Collection and Disposal). Quantities of refuse collected and disposed will be reported in units of weight (tons) (see TM 5-634).

(3) DA Form 2788-R (Technical Data Feeder Report). The data from DA Form 3917 will be used to prepare parts of DA Form 2788-R. The DA Form 2788-R will show the quantity of refuse collected and disposed, the quantity of material recycled, and the proceeds from sales.

15. FACTORS AFFECTING SOLID WASTE MANAGEMENT DECISION-MAKING.

List the installation-specific factors that have affected or could affect solid waste management decision-making. Examples of some factors or considerations follow:

a. Limitations Of Current Disposal Capacities. Summarize the potential for on-post/local/regional landfills to close or further restrict the acceptance of installation-generated wastes. Indicate whether other disposal facilities (incinerators, conversion plants) are expected to cease operation or restrict acceptance of installation-generated wastes.

b. Potential for Future Facilities. Include projections for the construction of new waste management, recycling, or composting facilities (cooperative or regional facilities, for example).

c. Mission. The installation's mission affects the types and quantities of wastes and recyclables generated. Mission changes or base closure/realignment should be considered in the development of the ISWMP.

d. Size and Population. The size and population of the installation are directly related to the amount of solid waste and recyclables generated. Projected changes in the size or population should be noted in the ISWMP to include the impact of the changes on all aspects of solid waste and recyclables management. Identify plans for changes in Major Command, garrison reorganization, or relocation of tenant activities since these can affect the workforce or residential population.

e. Recyclable Commodities Markets. Another important factor is the strength of recyclable markets, which may vary considerably and may determine whether or not an item is recycled. Details on recycling markets should be included in Section 9.

f. Community Relations. Describe any relevant public opinions or political pressures that may affect the installation's management of solid waste and recyclables.

g. Environmental Setting. Installations that are located in environmentally sensitive areas may encounter additional restrictions on the management of wastes. These additional restrictions should be discussed in the ISWMP to justify associated decision-making.

h. Regulatory Requirements. State and local regulations play an important role in solid waste management planning. The ISWMP must identify and reference all applicable state and local regulations. It may be useful to identify state or local requirements that are more stringent than the Federal standards or are believed to be unique to that locale.

i. Cost. A long-term comparative cost analysis should be included in the ISWMP for all feasible waste management options. Some factors to be considered are:

(1) Long-term (life cycle) costs associated with on-post landfills such as routine operations, maintenance, equipment, ground-water and methane monitoring, permit renewals, site expansions, reporting and recordkeeping, closure, post-closure care, potential corrective actions, and future liabilities.

(2) Off-post disposal costs, such as tipping fees, collection and transport, vehicle maintenance (if performed with in-house resources), reporting and recordkeeping, and the need for alternative disposal methods for wastes excluded at the disposal site.

(3) Cost avoidance, such as the reduced costs of waste collection and disposal associated with starting or expanding a recycling program.

j. Legal Factors. Issues such as liability and future property ownership and land use may also come into play during solid waste management decision-making. Possible legal hindrances to various solid waste management options should be identified in the ISWMP.

16. CONTINGENCY PLANNING. List information necessary in the event that current management or disposal options fail, such as:

a. List all disposal/transfer facilities within a 50-mile range of the installation.

WHAT IF…?

The ISWMP should evaluate the adequacy of current disposal mechanisms and contain provisions for alternate disposal mechanisms in the event that the present facilities fail to meet disposal needs. It is recommended that prior arrangements or agreements be made with regional or local disposal facilities to confirm that a backup option exists. Participation in local planning boards may further secure the installation's interests in disposal contingency planning.

b. Provide an up-to-date list of POC's at commercial waste hauling or disposal facilities.

c. List Federal (EPA), state, and local solid waste management office and contacts.

d. List POC's at other military installations within reasonable distance of the installation, particularly those operating onsite landfills. *(Note: it is Army policy that installation-operated landfills not accept wastes from outside sources. This is provided for emergency/ contingency planning only).*

17. SOLID WASTE MANAGEMENT ACTION ITEMS. List the actions to be taken to achieve the solid waste management goals and objectives. Identify the primary organization/ POC completing each task. Attach a timetable for task completion. The following are *examples* of action items:

a. (example) Address implementation of this ISWMP at EQCC meetings or other installation forums. Use these meetings as a forum to discuss concerns regarding solid waste management, recycling, or procurement issues.

b. (example) Develop procedures to educate all purchasing activities, including government credit card holders, in environmentally preferable buying practices.

c. (example) Set up a waste exchange, by electronic bulletin board, newsletter, or other method. Activities generating potentially reusable items will advertise the excess materials so they may be reused by another activity.

d. (example) Enhance public education on waste management and recycling issues through public meetings, community events, school programs, and use of the media.

e. (example) Report solid waste management data to the MACOM annually using SWARS. Include computation of the waste diversion rate resulting from implementation of the QRP.

f. (example) Include provisions for the reuse or recycle of excess or waste materials associated with construction and demolition projects.

g. (example) Initiate a low-technology compost operation for the management of yard wastes. Account for all diversion of wastes due to this operation.

h. (example) Periodically review this plan and the solid waste management program to evaluate their effectiveness and relevance.

18. PERIODIC REEVALUATIONS. Specify that the ISWMP will be reevaluated periodically or under certain conditions. Examples of conditions that would warrant reevaluation of the plan are: regulatory changes, changes in the types or quantities of wastes generated, reductions in the waste stream due to successful minimization/recycling programs, changes in the availability of regional disposal facilities, and new or amended contracts that affect solid waste management.

APPENDIX

EPA-DESIGNATED GUIDELINE ITEMS FOR AFFIRMATIVE PROCUREMENT

Designated items include many that are purchased by installations including paper and paper products, cement and concrete, carpet, floor tiles, fiberboard, plastic desktop accessories, binders, toner cartridges, trash bags, hydraulic mulch, printer ribbons, plastic envelopes, and pallets. A complete list of the designated and proposed items is shown in the following table. The requirement to purchase items with recycled content technically applies to procuring agencies spending at least $10,000 per year on the designated item. The $10,000 threshold applies to all purchases made by an entire agency (e.g., Department of the Interior, Department of Defense) rather than regional or local offices. Most Federal agencies exceed the $10,000 threshold for EPA designated items. Although an Affirmative Procurement program may not actually reduce amounts of wastes generated, it is considered a key component of integrated solid waste management. Buying products with recycled content "completes the circle," stimulating the market for recycled materials, conserving natural resources, and saving energy otherwise used to make products from virgin materials.

EPA'S LIST OF DESIGNATED PRODUCTS

Construction Products

Designated:	**Proposed:**
Building insulation products	Carpet backing
Carpet	Carpet cushion
Cement and concrete	Flowable fill
Coal fly ash	Railroad grade crossings/surfaces
Ground granulated blast furnace slag	
Consolidated and reprocessed latex paint	
Floor tiles	
Laminated paperboard	
Patio blocks	
Shower and restroom dividers/partitions	
Structural fiberboard	

Landscaping Products

Designated:	**Proposed:**
Garden and soaker hoses	Food waste compost
Hydraulic mulch	Landscaping timbers and posts
Lawn and garden edging	(plastic lumber)
Yard trimmings compost	

Non-Paper Office Products

Designated:	**Proposed:**
Binders (paper, plastic covered)	Plastic binders (solid)
Office recycling containers	Plastic clipboards
Office waste receptacles	Plastic clip portfolios
Plastic desktop accessories	Plastic file folders
Plastic envelopes	Plastic presentation folders
Plastic trash bags	
Printer ribbons	
Toner cartridges	

Paper and Paper Products

Designated:	**Proposed:**
Commercial/industrial sanitary tissue products	None at this time.
Miscellaneous papers	
Newsprint	
Paperboard and packaging products	
Printing and writing papers	

Park and Recreation Products

Designated:	**Proposed:**
Plastic fencing	Park and recreational furniture
Playground surfaces	Playground equipment
Running tracks	

Transportation Products

Designated:	**Proposed:**
Channelizers	None at this time.
Delineators	
Flexible delineators	
Parking stops	
Traffic barricades	
Traffic cones	

Vehicular Products

Designated:	**Proposed:**
Engine coolants	None at this time.
Re-refined lubricating oils	
Retread tires	

Miscellaneous Products

Designated:	**Proposed:**
Pallets	Sorbents
	Awards and plaques
	Industrial drums
	Mats
	Signage
	Strapping and stretch wrap


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